REMARKS

Receipt of the office action mailed December 16, 2003 is acknowledged. Claims 1-10 and 13-14 have been rejected. Claims 8 and 9 are hereby canceled. Applicant submits herewith new claims 15-18 for consideration. In keeping with the foregoing amendments and the following argument, reconsideration of the rejected claims and allowance of the newly submitted claims is respectfully requested.

The Examiners comments giving rise to the rejections under 35 U.S.C. § 112(2) have been incorporated. Accordingly, claims 1-7, 10 and 13 are now in proper form.

Applicant submits herewith a Declaration of David Cook Pursuant to 37 CFR § 1.131 swearing behind the A'Hearn reference. The attached Declaration shows inventive activity in a WTO country prior to the effective date of the A'Hearn reference of December 16, 1999. More specifically, the attached Declaration and the supporting Exhibits are evidence of conception and/or reduction to practice of the claimed invention prior to December 16, 1999. In the supporting Exhibits, the claimed invention is repeatedly referred to as "the SRS" system or the like, which stands for Smooth Ride System, and aspects of the Exhibits may also refer to "HBCV," which stands for Hose Burst Control Valve. The attachments to the Declaration include:

> 1) An internal memorandum (Exhibit B) detailing aspects of the Soft Ride System ("the SRS system), which was the internal name for the invention disclosed and claimed in the above-identified patent application. The memorandum describes certain aspects relating to the structure and operation of the SRS system.
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> 2) An internal memorandum (Exhibit C) entitled "Engineering Team - Key Issues (On-Going), which includes Item Numbers 14 and 15 relating to "Review SRS/120hp/5 speed/var. flow introduction . . ".
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> 3) Five (5) Work Area Orders (Exhibit D-1 through D-5) detailing further aspects of the SRS system, including the

development, testing, etc. of certain components and/or the entire system.

4) An Engineering Drawing No. 042/E30018 entitled "Boom Suspension" (Exhibit E) which shows aspects of the hydraulic ride improvement circuit, and includes a written/graphical description of one embodiment of a hydraulic circuit for a loader arm machine in which the hydraulic circuit includes a ride improvement system having hose burst protection as claimed in the present application.

Accordingly, the A'Hearn patent is not available as a reference, and therefore there can be no *prima facie* case of obviousness based even in part on that reference. Consequently, all of the pending independent claims are in allowable form, as are the claims dependent thereon.

Applicant also submits herewith for consideration the declaration of David Cook pursuant to 37 CFR 1.132. As outlined therein, hose burst protection systems and ride improving hydraulic circuits are incompatible systems and have not previously been combined into a single hydraulic circuit. In fact, there has been a long felt but unsolved need for a system combining these previously incompatible features. As also outlined therein, the claimed arrangement eliminates many of the complicated aspects of the A'Hearn reference (whether or not that reference is available), yet retains the fully functional aspects of a ride improvement system despite eliminating many of the complicated valving components. As stated in the Declaration, one of ordinary skill in the art at the time the invention was made would not have been aware that these disparate and incompatible systems could be combined into a single integrated system having the simplicity of the disclosed invention.

With or without the attached declarations, there can be no *prima facie* case of obviousness based on the cited combination in any event. Marchi illustrates a hydraulic circuit having a hose burst protection valve. Bauer does not. Neither reference discloses or

even suggests a ride improving circuit. On the other hand, A'Hearn discloses a ride improvement circuit. However, A'Hearn does not teach or even suggest a hose burst protection system integrated into a ride improvement circuit. Further, none of the cited references, alone or in combination, teach or even suggest the ride improvement circuit/hose burst protection system as claimed by each of the independent claims, and none of the cited references teach or suggest a ride improvement circuit/hose burst protection system that permits raising/lowering of the hydraulic arm while the ride improvement circuit is engaged or activated, or that meets other limitations of the claims.

More specifically, claim 1 positively recites, in part, that the first control valve (on the raise side) is movable between the first position in which passage of hydraulic fluid is permitted only from the hydraulic accumulator toward the first chamber, to a second position in which passage of hydraulic fluid is permitted in two directions between the accumulator and the first chamber. By comparison, the analogous control valve 50 on the A'Hearn reference has one position in which flow is permitted in both directions and another "flow blocking" position. See Fig. 1 and, lines 47-53. Where is the suggestion to alter this specific "flow blocking" teaching of the reference? No such suggestion has been supplied. Simply put, A'Hearn reference teaches away from the claimed arrangement.

Claim 1 further recites, in part, that the ride improvement means permits raising of the loader arm assembly when the first and second control valves are in the second positions, and lowering of the arm with the system still activated by shifting the second control valve to the first position.

By comparison, on the A'Hearn reference, the system does not permit raising and lowering of the loader arm when the ride improvement system is activated. More specifically, once the arm is raised or lowered to the desired position using the directional control valve 24, the valves 47 and 52 of the reference are in their "flow blocking" positions.

When the ride improvement system is activated, the directional control valve 24 must be in the neutral position as illustrated in the each of the Figures. Simply put, if one were to attempt to raise the load (by shifting the directional valve 24 toward the left when viewing the Figures), the pilot system 29 becomes isolated and both of the valves 47 and 52 return to their flow blocking positions, thus isolating the accumulator 42. This is plainly evident by reviewing the valve 32 which, in two of the three positions shown in Figure 1 would route excess pressure from the directional valve 24 to the sink 23. In the third position of Figure 1, the flow is directed from the source of pressurized pilot fluid 30 back toward the control valve 24, with the two position valve 68 blocking the signal conduit 49. Consequently, when raising (or lowering for that matter), the loader arm system of the A'Hearn reference is completely and totally isolated from the ride improvement elements. Therefore, the reference teaches away from what is claimed and hence cannot be used to support a *prima facie* case of obviousness.

Furthermore, even when combined with the other references, the combination wholly fails to teach or suggest at least the above-noted specific limitations of claim 1. Where is the suggestion to reconstruct the valves 47 and 52 to meet the limitations of claim 1? Where is the suggestion to place a hose burst protection system into the device of the reference without altering the operation of the resolver valve 66, and the valve 32. What is the impact of the hose burst protection assembly on the operability of the signal conduit 49, and the impact on the operation of the two position valve 68? There would be no suggestion to make such modifications/changes, because such changes/modifications would require one to ignore the express teachings of the reference, unless one were to use Applicant's disclosure as a template. Therefore, there cannot be a *prima facie* case of obviousness for these reasons as well.

Moreover, there simply would be no way to address the issue of grafting a hose burst protection element onto the circuitry of the A'Hearn reference without a) significantly altering the operability of the reference; and b) using impermissible hindsight. For example, if one was to add the check valve assembly as claimed to the system of the reference, what would be the impact on the resolver valve 66, the pilot system valve 32, the two position valve 68, etc.? All of these components are critical to the operation of the ride improvement system of the A'Hearn reference. Once again, there simply cannot be a *prima facie* case of obviousness on the basis of the cited references. Consequently, claim 1, and any claims dependent thereon, is in allowable form.

Moreover, there simply cannot be a *prima facie* case of obviousness based on either Bauer or Marchi in any event. Bauer, at Fig. 20, merely discloses a pair of loader arm cylinders 25, 26, which may be operated using the valve 80. There are a pair of check valves 250, 251 in the auxiliary circuit operated by the spool 83, which valves allow fluid to pass, for example, from line 211 via either of the checks 250/251, to line 246 or 247, respectively. Also, fluid may flow from lines 246 or 247 toward line 211 via the pilot relief valves 248 or 249. Neither the loader arm circuit nor the auxiliary circuit of Bauer teaches or even suggests the claimed first and second control valves, and their respective flow characteristics as is distinctly claimed by claim 1.

Moreover, how is one supposed to graft the accumulator onto Bauer without using the present disclosure as a template, and without discarding the system of valves that operate to communicate fluid to and from the accumulator in A'Hearn. Such a combination would destroy the functionality of one or more of the references. The Examiner is not free to pick and choose those aspects of a reference that support the rejection while ignoring those aspects that teach away from making the combination. See MPEP Section 2143.02.

Further, in no prior action has the Examiner realistically addressed the fact that Bauer actually teaches away from the claimed invention, through the provision of the position 80c of the lift spool 80, which "connects conduits 230 and 231, with no drain through conduit 235, to mid-inlet spool 81 to thereby allow free movement of loader arms 21." Col. 13, lines 14-18. This arrangement allows for "free float" of the loader arm when the bucket is moved over an "irregular surface." Col. 13, lines 20-24.

Such a "free float" arrangement, which allows free movement of the loader arm in response to encountering ground irregularities, is antithetical to what is presently claimed, and plainly teaches directly away from the invention of claim 1 which particularly recites that the ride improvement means routes fluid to and from the accumulator and/or the low pressure region to provide hydraulic damping of arm movement. What is claimed is precisely the opposite of "free float." There is no *prima facie* case of obviousness on this basis alone and the rejection must be withdrawn.

Like Bauer, Marchi also teaches directly away from the invention of claim 1. Marchi includes what is described as a "floating" mode, and the configuration of the system in the "floating" mode is indicated in Figure 5. In the "floating" mode of Marchi, the "first and second expansible chambers 24 and 26 are joined in fluid communication with each other, thereby permitting floating of the implement operatively associated with the actuator 18." See col. 6, lines 54-58. The provision of an accumulator and a low pressure region would of course preclude the "floating" mode by actually preventing communication of the two chambers with each other. Further, maintaining the chambers in communication precludes any sort of ride improvement as distinctly claimed by claim 1. Thus, adding an accumulator and/or a low pressure region would substantially change the mode of operation of the reference, and thus there simply would be no suggestion to make such extensive changes. Once again, there can be no *prima facie* case of obviousness.

Independent claims 7, 10 and 14 are also in allowable form for the reasons outlined above with respect to claim 1.

Applicant submits for consideration new claim 15, which relates to a ride improving hydraulic circuit for a loader arm of a wheeled loader and having hose burst protection, and recites, in part, a hydraulic cylinder and a selection valve for raising and lowering the loader arm. A hose burst check valve is mounted to the hydraulic cylinder and is coupled to a first (cylinder raising) line at a first point and a second point and operatively coupled to the first chamber. The hose burst check valve is arranged to prevent fluid under pressure from passing from the first chamber toward the selection valve but permitting fluid under pressure to flow from the selection valve toward the first chamber. A relief valve is disposed in the first line between the first point and the second point and is shiftable from a first position to a second position in response to pressure changes in the second (cylinder lowering) line. The first position is arranged to prevent fluid flow between the selection valve and the first chamber in both directions, the second position arranged to permit fluid flow from the first chamber toward the selection valve. The relief valve is arranged to shift to the second position in response to a pressure increase in the second chamber. An accumulator is operatively coupled to the hydraulic cylinder, and a first control valve is disposed in the first line and connected to both the accumulator and the first chamber, with the first control valve in flow communication with the hose burst protection valve and the first chamber, the first control valve movable between a first position in which hydraulic fluid flow is permitted in only a single direction from the accumulator to the first chamber and a second position in which hydraulic fluid flow is permitted between the accumulator and the first chamber in both directions. A low pressure area is provided, and a second control valve is provided operatively connecting the second line to the low pressure area, with the second control valve movable between a first position in which hydraulic fluid flow between the second line and

the low pressure area is prevented in at least one direction and a second position in which hydraulic fluid flow between the second feed line and the low pressure area is permitted in both directions. The first control valve, the second control valve, and the hose burst protection valve cooperate to provide a ride improving circuit having an active and inactive configuration, the ride improving circuit arranged to permit raising and lowering the loader arm while the ride improving circuit is active and when the ride improving circuit is inactive. The active configuration is arranged to permit raising the loader arm by shifting each of the control valves to the second position with the relief valve biased toward the first position, and the active configuration is further arranged to permit lowering the loader arm by shifting the first control valve to the second position and the second control valve to the first position, the relief valve shiftable toward the second position in response to pressure increases in the second line.

By comparison, the cited combination does not teach or even suggest a ride improvement system having hose burst protection in which the ride improvement aspect permits raising and lowering of the loader arm while the ride improvement system is active. Accordingly, new claim 15 is in allowable form.

New claim 17 recites, in part, a hose burst protection valve mounted to the cylinder in disposed in the first line and coupled to the first chamber. The hose burst protection valve includes a check valve arranged to prevent fluid under pressure from flowing from the first chamber toward the selection valve but permitting fluid under pressure to flow from the selection valve toward the first chamber. The hose burst protection valve further includes a relief valve shiftable from a first position to second position and connected to the second chamber, the first position arranged to prevent fluid flow from the selection valve to the first chamber in of directions, the second position arranged to permit fluid flow from the first chamber toward the selection valve, the relief valve shiftable to the second position in

response to pressure increase in the second chamber. A first control valve is disposed in the first line and is connected to both the cylinder and the accumulator. The first control valve, a second control valve (which operatively connects to a low pressure area), and the hose burst protection valve cooperate to provide a ride improving circuit having an active and in an active configuration. The ride improving circuit is arranged to permit raising and lowering the loader arm while the ride improving circuit is in the active configuration and when in the inactive configuration. The ride improving circuit is arranged to permit raising the loader arm in active configuration by shifting each of the first and second control valves to a second position with the relief valve biased toward a first position, and is further arranged permit lowering the loader arm in the active configuration by shifting the first control valve to the second position and the second control valve to the first position, with the relief valve shiftable toward the second position in response to pressure increases in the second line.

By comparison, new claim 17 is not disclosed or even suggested by the cited references, either alone or in any properly combinable combination. Accordingly, new claim 17 is in allowable form.

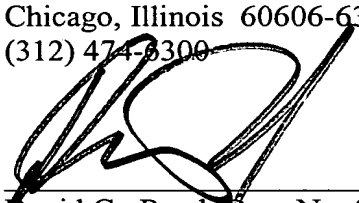
New claim 18 is submitted herewith for consideration, and positively recites, in part, a control valve and a hose burst protection valve that cooperate to provide a ride improving circuit having an active and an inactive configuration and that permits raising and lowering the loader arm while the ride improving circuit is active and when the ride improving circuit is inactive. A hose burst check valve is disposed in the first feed line in conjunction with the relief valve, and a control valve comparably connects the second line to low pressure area.

By comparison, the invention of new claim 18 is not taught or even suggested by any of the cited references taken alone or in any properly combinable combination. Accordingly, new claim 18 is in allowable form.

In view of the foregoing the above-identified application is in condition for allowance. In the event there is any remaining issue that the Examiner believes can be resolved by a telephone conference, the Examiner is respectfully invited to contact the undersigned attorney at (312) 474-6612.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN
Attorneys for Applicants
6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6357
(312) 474-6300



David C. Read (Reg. No. 39,811)
Attorney for Applicant

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